Heartland
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Regulatory Division
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RE: Response to October 9, 2020 USACE Comment Letter, Proposed Big Hollow Wetland Mitigation Bank Project, Sauk County, WI

On behalf of Big Hollow Wetland, LLC, Heartland Ecological Group, Inc. ("Heartland") is providing a summary response to the comments provided in the USACE letter submitted to the bank Sponsor dated October 9, 2020 in response to the review of the draft MBI for the proposed Big Hollow Wetland Mitigation Bank project. The comments will be incorporated into the draft MBI for final review once we reach resolution on addressing the comments. The responses to the comments follow the numbering and order presented in the Corps letter.

1. Compensation Types

In conjunction with USACE and WDNR staff, Heartland completed a soil evaluation in the early fall of 2020 to identify and map hydric and nonhydric soils. An additional six (6) soil profiles were evaluated within the proposed wetland restoration portions of the site (Soil Data Sheets attached). All soil profiles that were evaluated showed indicators of seasonally high-water tables near the surface such as redoximorphic features and depleted or nearly depleted matrices. This was consistent with soils evaluated during the wetland determination study as well. Soil profiles that met an indicator of hydric soils were limited to the northwestern portion of the wetland restoration areas. Soil profiles that did not meet a hydric soil indictor were very marginal in nature and did not meet hydric soil indicators based on very minor technicalities. For example, at both SP-3 and SP-5 the depleted matrix present was only 2 inches too deep to meet A11. Depleted Below Dark Surface. Saturated soils and a water table were present within 24 inches of the soil surface. Soils evaluated at SP-6 again marginally do not meet a number of hydric soil indicators by minor technicalities but otherwise reflects a poorly drained soil with a seasonally high-water table. Saturated soils were present within 12 inches of the surface. It is apparent that the entire wetland restoration areas support a mosaic of hydric and marginally nonhydric soils given the lack of relief across the site and

evidence of seasonally high-water tables. Nonetheless, a hydric soil boundary was estimated based on the results of the soil evaluation, considering topography and hydrology (Figure 12).

The areas of nonhydric soils that are proposed for wetland credits have been reclassified as wetland establishment (Figure 11). However, the Sponsor proposes a credit ratio of 0.75:1 for the wetland establishment areas. There is no fundamental difference in the ecological benefits provided between the rehabilitation and establishment portions of the wetland and while minor discrepancies within the soils that determine hydric characteristics are present, a mosaic of hydric and marginal nonhydric poorly drained soils lie throughout the project area with nearly no elevation relief. Very limited grading is necessary to achieve the proposed hydrology in the establishment areas, in fact by removing only two inches of the surface soils, many areas will meet hydric soil criteria immediately following construction. This is also supported by the hydrology monitoring and modeling that has been completed and presented previously and is also addressed in response to Comment #3 below.

2. Wildlife Hazard Assessment

Please see the attached email correspondence with WisDOT (Mr. Michael Menon) and USDA Wildlife Service (Mr. Charles Lovell) approving the plan and recommending moving forward with the wetland mitigation project. The coordination with WisDOT and USDA was completed in cooperation with the USACE (Ms. Kerrie Hauser) throughout the entire multiyear process to address this issue. The USACE also concurred that the review and responses completed by WisDOT and USDA was sufficient to move forward with the wetland mitigation project with respect to the concerns initially raised by the Tri-County Airport.

3. Engineering

The proposed grading plan has been revised to reflect the IRT's recommendation to reduce the overall extent of scraping and to limit the size and depth of individual scrapes. A revised grading concept plan is attached, and detailed engineering drawings will be submitted with the draft MBI. The extent of scraping has been cut approximately in half to 30 ac. The upper 2 inches of soil will be scraped off throughout the 30 acres, with small areas (approximately 0.1 ac) deepened to 6 inches dispersed throughout and comprising 25% of the total scrape area. This will facilitate hydric soil development, distribute surface runoff more widely, and limit the size and depth of inundation.

The scraping will be focused in the southeastern part of the site to expand the current pattern of inundation from upstream runoff as it traversed the site from northwest to southeast. Earthwork cut will be limited to the extent of the scrape shown on the attached concept plan, and placement of fill will be limited to filling the ditch and constructing the berms as shown on the plan. Earthwork cut and fill balances in the attached plan. No other borrow or fill areas are proposed.

Hydrologic modeling will be updated for the final draft MBI submittal. Review of the previous hydrologic modeling and the soil pits observed during the September 2020 site visit with the Corps and WDNR provide insights into the site's hydrology. The attached concept plan shows the extent of inundation for existing conditions during the 1-yr rainfall. The September 2020 soil pits are also displayed. Note that hydric soils (pits 1, 2 and 4) are within the area inundated during the 1-yr event. Soils in the pits beyond this inundation extent (pits 3, 5 and 6) are only marginally non-hydric. This illustrates the relationship between inundation by surface runoff and hydric soil development.

We expect that wetland restoration will be successful in areas of with a mosaic of hydric and marginally non-hydric soils because (1) scraping the uppermost 2 inches or more will alter the soil profile in a way that will make them qualify as hydric, (2) increasing the spread of upstream runoff across the site with further develop hydric characteristics, and (3) ceasing tillage is expected to reduce the infiltration rate at the soil surface and lead to increased inundation extent and duration.

4. High Capacity Well

The impact of the existing irrigation well on groundwater levels is described in the draft MBI, and a summary and additional information are included here.

The well typically operates during the 4-month irrigation season. The instantaneous pumping rate when the well is operating is 1200 gpm, however the well only pumps intermittently when the irrigator is in use. Wisconsin Department of Natural Resources pumping records from 2010 – 2018 show that the average pumping rate during the irrigation season (including both pump-on and pump-off periods) is 180 gpm. (See page 16 of the draft MBI.)

The proposed mitigation plan would remove ¾ of the area irrigated by this well from agricultural production, so the future pumping rate of the well will be approximately 25% of the existing rate.

Groundwater drawdown was evaluated at the end of the irrigation season (maximum drawdown) using the standard Theis method (see pages 22 – 27 and Appendix B of the draft MBI). Drawdown was evaluated at distances from the

well of 500 ft (in the center of the wetland mitigation area) and 1500 ft (including most of the mitigation area). As the table below shows, drawdown for the proposed conditions is only 0.1 ft and 0.06 ft at distances of 500 ft and 1500 ft, respectively. Figure 10a attached illustrates these radii at the site.

Predicted water table drawdown for existing and proposed conditions.

Condition	500 ft from well	1000 ft from well
Existing	0.4 ft	0.25 ft
Proposed	0.1 ft	0.06 ft

5. Proposed LLC & liability issues

The bank sponsor representative is currently addressing the Corps and IRT's concerns regarding the structure of the bank sponsor Limited Liability Company and is confident that this will be addressed appropriately in the final MBI. We will provide additional information regarding this issue as soon we are able to for the Corps review and acceptance.

6. Credit table revisions

In response to the IRT's comments regarding compensation types being utilized (point #1) and an additional rehabilitation area that was identified, a revised map figure depicting areas where each respective compensation type is being utilized (Figure 11) and a revised credit table (presented below) have been produced. In addition, a statement that the portion of mitigation credits derived from upland buffer that meet performance standard shall be allocated to the balance of fresh wet meadow credits available for sale shall be added to section 8.0 Determination of Credits of the MBI.

Compensation Type	Vegetative Community	Area (ac)	Credit Ratio	Projected Credits
Wetland Re-Establishment	Wet Meadow	70.06	1:1	70.06
Wetland Establishment (Creation)	Wet Meadow	61.23	0.75:1	45.92

Wetland Rehabilitation	Wet Meadow	3.24	0.75:1	2.43
Upland Buffer Establishment	Dry-Mesic Prairie	58.19	0.25:1	14.55
Total Estimated Credits Generated				132.96

7. Performance Standards

Hydrology

Section 9.1 (Hydrology) will be revised as follows:

The wet meadow community hydrology regime shall consist of inundation and/or the water table 12 inches or less below the soil surface for a minimum duration of 5% to 12.5% of the growing season. During normal and drier than normal conditions, inundation during the growing season shall not occur except at the start of the growing season due to snowmelt and/or precipitation, or following the 2-year, 24-hour – or greater – precipitation event. Depth of inundation during the growing season shall be 6 inches or less, with a duration of less than 14 consecutive days during the growing season.

Wetland hydrology must meet the standards above in 2 years before this performance standard has been met. Once the Corps determines that these standards have been met, the Sponsor may be released from continued hydrology monitoring.

The hydrology of the landscape is unique and the proposed performance standards were established to account for the anticipated, widely variable hydroperiod. Hydric soils at the site appear to have developed in a hydrologic regime defined by frequent, short-term inundation by surface water from upstream, independent of the regional water table, and occasional wet years with shallow groundwater. Groundwater fluctuates significantly at the Project Area, and the water table at times will be at the surface and other times 4 – 6+ feet below the surface. The proposed hydrology standards account for the site's natural hydrology; meeting wetland hydrology criteria; limiting long durations of inundation per the proposed Wildlife Hazard Management Plan Management; supporting a wet meadow plant community comprised of

species adapted to the anticipated variable hydroperiod; avoiding negative off- site hydrology impacts; and maintaining the integrity and function of the regional drainage ditch.

The CSP will be modified to state that there "shall be no hydrology standard requirements for upland buffer vegetative communities".

Vegetation

The vegetation performance standards that were presented in the MBI are as follows:

Wet Meadow Vegetation Performance Standards

Category	Interim 1	Interim 2	Final
Relative areal cover	>= 50% NNI < 50% InNN	>= 70% NNI < 30% InNN	>= 80% NNI < 20% InNN
Species richness	>= 6 NNI	>= 10 NNI	>= 15 NNI
Areal hydrophyte cover	>= 45%	>= 60%	>= 75%
Maximum unvegetated areas	<400 ft^2	<100 ft^2	<10 ft^2

Upland Buffer Vegetation Performance Standards

Category	Interim 1	Interim 2	Final
Relative areal cover	>= 50% NNI < 50% InNN	>= 70% NNI < 30% InNN	>= 80% NNI < 20% InNN
Species richness	>= 6 NNI	>= 10 NNI	>= 15 NNI
Maximum unvegetated areas	<400 ft^2	<100 ft^2	<10 ft^2

We would like to request clarification on the area threshold comment "you must include an area threshold (square footage per ace or for each community) for the bare ground metric of your interim and final vegetation PS."

- We have worded the performance standard as "unvegetated area", which is meant to include both areas of bare ground and areas where standing water may be present, potentially inhibiting establishment of vegetation. Should the standard only reference bare ground as indicated by your comment?

- Should this standard be worded so that no single area of > 400 ft^2 of unvegetated area be present?

- We have observed a number of recently approved CSP's for both private (Sugar River 2020) and in-lieu (Soik 2019) banks where this vegetation standard (exactly as it appears above) was approved and we are unclear why the Corps is requesting it be changed for this project?

In addition, a statement will be added to the MBI regarding the requirement to meet the vegetation Interim 2 performance standards for two consecutive years after Interim 1 performance standards for vegetation has been met for a full growing season.

In response to the DNR's comment #5 "DNR requests this site utilizes similar vegetation performance measures to recently approved wetland mitigation banks" and comment #6 "DNR requests that information regarding the proposed final NNI relative areal cover vegetation standards….":

> These interim and final vegetation standards were selected because these same standards were approved for the Soik ILF site, a recently approved mitigation site (2019). The Soik ILF site is a wetland restoration being performed in a similar setting within an agricultural field. The Sugar River Wetland Mitigation Bank approved in 2020 also has substantially similar vegetation performance standards.

8. Credit release schedule

The bank Sponsor is proposing to maintain the credit release schedule provided in the draft MBI with the revisions noted in #7 above. There is inherent risk associated with the development of wetland mitigation banks in general, most of which is on the bank Sponsor. There is no distinction between the level of risk associated with the development of wetlands within the areas denoted as establishment vs any other restoration portions of the Big Hollow mitigation project. Financial assurances will be provided by the bank Sponsor that would meet the project financial requirements to address

any substantial performance issues if the Sponsor were not to address them appropriately. A significant amount of effort and cost have been directed at developing the hydrology restoration component of this project through many years of on-site and near site hydrology monitoring and extensive predictive hydrology modeling that supports a favorable outcome of the project from a hydrologic perspective. Withholding vegetation performance credit releases until two years of hydrology performance standards are achieved would put this project at greater financial risk than any other risks imposed by wetland establishment techniques which have been minimized through the extensive hydrological engineering studies.

The performance monitoring period suggested by the Corps would be nearly impossible to complete within a typical 5-year monitoring period, given the recommendations to meet hydrology standards for two years prior to meeting the vegetation interim standards, which require one consecutive year for Interim 1 standards and an additional two consecutive years for Interim 2 standards, plus a final year performance standard which would equate to a minimum of six (6) years of monitoring. This is assuming that normal to wet climatic conditions are present during the first two years of establishment. Drier than normal climatic conditions that may result in underachievement of hydrology performance standards that are independent of any site specific or design issues at any given time during the hydrology performance evaluation period could prolong the overall performance monitoring duration for vegetation even beyond six years, with no credit releases and with no consideration of how successful the vegetation actually establishes. For example, following the first year of construction, hydrology performance standards may be met for one year. In the second year, climatic conditions could be drier than normal and may result in under performing on the achievement of meeting two years of hydrology standards. In this case, the hydrology performance period would extend into Year 3 until met, which would extend the commencement of the Interim 1 vegetation standards to monitoring Year 4 with no credit release.

9. Monitoring Plan

Section 10.2 Vegetation Monitoring will be revised to include the recommendations made by the WDNR. Section 10.2 will be revised as follows:

Both wet meadow and upland buffer plant communities will be monitored annually during years 1 through 5 to determine if vegetation performance standards are being met. Permanent vegetation monitoring plots will be established following the conclusion of construction and will be used for the evaluation of the vegetation performance standard throughout the

monitoring period. Vegetation monitoring will utilize both timed meander and permanent plot-based methods.

Vegetation monitoring to document the fulfilment of the vegetation performance standard shall consist of recording vegetation observed at the permanent vegetation monitoring plots in late summer (late August / Early September). During plot-based sampling, all plant species will be identified and their percent areal cover within each sample plot will be recorded. Sample plots will consist of nested plots and will record all herbaceous vegetation within a 5-foot radius and all shrubs within a 15-foot radius. Photographs in cardinal directions radiating from the center of each sampling plot will also be recorded. Observations of percent cover of NNI/InNN species, percent cover of hydrophytic species (in wet meadow communities), and species richness counts will be made at each permanent monitoring plot. Percent cover of NNI/InNN species and percent cover of hydrophytic species data recorded at each monitoring plot will be grouped dependent upon community type (wet meadow or upland buffer) and averaged to determine if the vegetation performance standard is met for the community as a whole. Species richness counts for determining if the species richness standard is met will be the summed number of unique species observed in the sampling plots within each respective community.

Two meander surveys will also be completed annually throughout the monitoring period. Detailed vegetation data will not be collected during the meander surveys and they are not intended to determine if the NNI/InNN percent cover, areal hydrophyte cover, or species richness standards are met. One meander survey effort will be conducted early in the growing season (late May / Early June) and is intended to assess the presence of populations of INN species and evaluate management needs (e.g. INN herbicide applications or overseeding) for the current year. A second meander survey effort will be conducted during the late summer (late August / early September) and is intended to evaluate the "maximum unvegetated areas" element of the performance standard. Given the large size of this restoration project, the site will be subdivided into assessment areas of no more than 10 acres and a meander survey will be conducted within each assessment area.

Growing Season Determination

The commencement and termination of the growing season will be determined based the guidance provided within the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) Environmental Laboratory U.S. Army Corps of Engineers. August 2010.

10. Long-term Management

The following requests for additional information will be included in the CSP related to long-term management:

- The following will be added to the CSP in reference to completing prescribed burns: "Any burning completed on-site will follow all applicable state and local guidelines and abide by all pertinent regulations."

- DNR requests additional information regarding the proposed long-term management plans for the site. In specific, DNR requires the following information be provided:

  a. *What long-term maintenance activities are expected at the site? For example, the draft CSP mentions monitoring for erosion concerns, but will other actions need to be completed? Examples could include periodic mowing or burning to maintain the plant community, as well as berm inspections and repairs.*

     Long-term maintenance activities will include completion of prescribed burns at appropriate timeframes. Occasional mowing may be implemented in the event that small areas of the site that are easily accessible would benefit from such mowings, but otherwise in generally wide-spread, routine mowing will be avoided. Berms will be inspected and repaired as needed.

  b. *What will be the long-term goal for the site? For example, will the current plant community be maintained, or does the prospective bank sponsor propose to allow natural succession to occur? This consideration will be important in identifying the long-term maintenance activities that will occur on site.*

     The Sponsor is proposing to maintain the plant community in a predominately herbaceous plant community by implementing prescribed burning. Natural succession into a shrub dominated community type is not the long-term goal, although this could be evaluated in the future if portions of the site would benefit from areas of shrub habitat assuming the shrub species are desirable.

  c. *A discussion of how the long-term maintenance of the site will be funded should be included. One potential funding option could be to place a percentage of each credit sale into an escrow account that will be used to fund the site's long-term maintenance needs.*

The Sponsor will be responsible for long-term management of the site and associated financial obligations. However, the Sponsor is willing to set-up an escrow account where $750 from each credit sale will be placed which would ultimately achieve an escrow account of approximately $100,000 when all credits are sold. This would be adequate to finance numerous prescribed burns and other typical long-term management activities.

11. Title search

- The bank Sponsor is currently in the process of completing a "Search and Hold, Minimum Commitment" title review as requested and will submit to the Corps once it is completed.

Please let me know if you would like to schedule a time to discuss these comments once you have had an opportunity to review the responses.

Sincerely,
Heartland Ecological Group, Inc

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(608) 575-5783

Attachments:

- Wildlife Management Plan Approval Email Correspondence
- Soil Evaluation Data Sheets
- Concept Grading Plan
- Figure 9. Proposed Hydrology
- Figure 10. Proposed Vegetation
- Figure 10a. Irrigation Well Setbacks
- Figure 11. Wetland Compensation Types
- Figure 12. Hydric Soil Map

SOIL 9/30/20 Sampling Point: Sp1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/1	98	10YR 5/6	2	C	M	Loamy/Clayey	SiL - high organic content
14-34	10YR 5/1	100					Sandy	LS
34-42	10YR 5/3	100					Sandy	S

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL 9/30/20 Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	95	10YR 5/6	5	C	M	Loamy/Clayey	SiL - high organic content
6-17	10YR 2/1	100					Loamy/Clayey	SiL - high organic content
17-32	10YR 5/2	88	10YR 5/8	12	C	M	Loamy/Clayey	SiL / SL
32-36	10YR 5/3	85	10YR 5/8	15	C	M	Sandy	Medium Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
X Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL 9/30/20 Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Loamy/Clayey	SL
14-22	10YR 4/2	90	10YR 5/6	10	C	M	Sandy	LS
22-30	10YR 5/2	85	10YR 5/8	15	C	M	Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
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Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
? Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 12

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL 9/30/20 Sampling Point: SP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 3/1	98	10YR 4/6	2	C	M	Loamy/Clayey	SL
24-30	10YR 5/1	85	10YR 5/6	15	C	M	Loamy/Clayey	SL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
? Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 12

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL 9/30/20 Sampling Point: SP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	100					Loamy/Clayey	SiL
14-24	10YR 5/1	95	10YR 5/8	5	C	M	Loamy/Clayey	SiL
24-28	10YR 6/1	100					Sandy	Medium Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
? Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 22
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 16

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL 9/30/20 Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					Loamy/Clayey	SL
18-24	10YR 4/2	100					Sandy	LS
24-28	10YR 5/1	100					Sandy	LS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
? Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 11

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETS Analysis Worksheet

Project Name: Big Hollow
Project Number: 20190160
Period of interest: 9/20/2020
Station: Tricounty airport
County: Sauk

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	Sept	1.79	3.23	3.94
2nd month prior:	August	2.41	4.24	5.16
3rd month prior:	July	2.56	3.86	4.63
		Sum =	**11.33**	

Site determination

	Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
	4.97	Wet	3	3	9
	2.59	Normal	2	2	4
	7.77	Wet	3	1	3
Sum =	**15.33**			Sum*** =	**16**

*Normal precipitation with 30% to 70% probability of occurrence

Determination: X Wet / Dry / Normal

**Condition value:
Dry = 1
Normal = 2
Wet = 3

***If sum is:

6 to 9	then period has been drier than normal
10 to 14	then period has been normal
15 to 18	then period has been wetter than normal

Precipitation data source: Midwest Regional Climate Center, cli-MATE: MRCC Application Tools Environment

Reference: Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination*, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

From: Jeffrey Kraemer
To: Hauser, Kerrie J CIV USARMY CEMVP (USA)
Cc: Dale Clark; Scott Fuchs; Vesperman, Todd M CIV USARMY CEMVP (US); Menon, Michael V - DOT; lovell, Charles D - APHIS
Subject: RE: Big Hollow Wetland Mitigation Wildlife Hazard Resolution
Date: Tuesday, June 25, 2019 2:48:23 PM

Thanks Kerrie. We will proceed with the DMBI and we will continue to coordinate with WisDOT BOA and APHIS on the development of the O&M plan.

Jeff Kraemer, Principal
Office: 608.490.2450 Ext. 2
Cell: 608.575.5783
www.heartlandecological.com

-----Original Message-----
From: Hauser, Kerrie J CIV USARMY CEMVP (USA) <Kerrie.J.Hauser@usace.army.mil>
Sent: Tuesday, June 25, 2019 3:35 PM
To: Jeffrey Kraemer <jeff@heartlandecological.com>
Cc: Dale Clark <blackbearenterprises@yahoo.com>; Scott Fuchs <scott@heartlandecological.com>; Vesperman, Todd M CIV USARMY CEMVP (US) <Todd.M.Vesperman@usace.army.mil>; Menon, Michael V - DOT <michael.menon@dot.wi.gov>; Lovell, Charles D - APHIS <charles.d.lovell@usda.gov>
Subject: RE: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Hi Jeff,
We have reviewed the emails from WisDOT BOA and APHIS and agree that the project can move forward.

The remaining substantial concern is with the O&M plan and incorporating it within the DMBI. I would recommend that it be an attachment with clearly defined roles on who (what entity) will have enforcement rights and responsibilities. This has been discussed with our national experts and the Corps cannot assume enforcement responsibility for the O&M plan as it pertains to wildlife hazards.

Once I receive the DMBI we will move forward with the wetland bank process. Please let me know if you have my questions.
Kerrie

Kerrie Hauser
Regulatory Project Manager

U.S. Army Corps of Engineers
La Crescent Regulatory Field Office
1114 South Oak Street
La Crescent, Minnesota 55947
Phone: (651) 290-5903

-----Original Message-----
From: Jeffrey Kraemer [mailto:jeff@heartlandecological.com]
Sent: Tuesday, June 25, 2019 10:01 AM
To: Hauser, Kerrie J CIV USARMY CEMVP (USA) <Kerrie.J.Hauser@usace.army.mil>
Cc: Dale Clark <blackbearenterprises@yahoo.com>; Scott Fuchs <scott@heartlandecological.com>; Vesperman, Todd M CIV USARMY CEMVP (US) <Todd.M.Vesperman@usace.army.mil>; Menon, Michael V - DOT <michael.menon@dot.wi.gov>; Lovell, Charles D - APHIS <charles.d.lovell@usda.gov>
Subject: [Non-DoD Source] RE: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Hey Kerrie – just checking in on the status of this project and when we can expect a response regarding next steps?

Thanks

Jeff Kraemer, Principal

Office: 608.490.2450 Ext. 2

Cell: 608.575.5783

Hfocheds=www.heartlandecological.com <Hocledhttp://www.heartlandecological.com/>

From: Jeffrey Kraemer <jeff@heartlandecological.com>
Sent: Tuesday, June 4, 2019 8:19 AM
To: Menon, Michael V - DOT <michael.menon@dot.wi.gov>; Lovell, Charles D - APHIS <charles.d.lovell@usda.gov>
Cc: Kerrie Hauser (Kerrie.j.hauser@usace.army.mil) <kerrie.j.hauser@usace.army.mil>; Dale Clark <blackbearenterprises@yahoo.com>; Scott Fuchs <scott@heartlandecological.com>; Todd Vesperman <todd.m.vesperman@usace.army.mil>
Subject: Re: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Chip and Michael –

Thanks for your response on this. We are looking forward to moving ahead with this project.

Kerrie - please let us know the next steps and timing as we would prefer to move forward with the additional baseline field studies and design this growing season.

Thanks

Jeff Kraemer

Heartland Ecological Group, Inc

Cell: (608) 575-5783

Office: (608) 453-9864

From: Menon, Michael V - DOT <michael.menon@dot.wi.gov <mailto:michael.menon@dot.wi.gov> >
Sent: Thursday, May 30, 2019 1:09 PM
To: Lovell, Charles D - APHIS; Jeffrey Kraemer
Cc: Kerrie Hauser (Kerrie.j.hauser@usace.army.mil <mailto:Kerrie.j.hauser@usace.army.mil>); Dale Clark; Scott Fuchs
Subject: RE: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Hi Jeff,

The Bureau of Aeronautics does not object to the tenant listed in the revised document. I am seeking guidance from my superiors in regard to providing a signature. I will know about that tomorrow (5/31). In the meantime, I agree with USDA Wildlife Services' opinion that the project should move forward. I would like to suggest the addition of some language in the plan to address aviation safety when carrying out some of the mitigation techniques, specifically as follows:

Repellent and Harassment

- • Harassment with non-lethal pyrotechnics fired from a handheld launcher. User must be sure that the airspace is clear of aircraft prior to discharge so as to A) not direct the projectile toward the aircraft and B) not initiate bird flight into the path of the aircraft
- • Harassment with lasers (low-light conditions). User must be sure that the airspace is clear of aircraft prior to laser use so as to A) not direct the laser toward the aircraft and B) not initiate bird flight into the path of the aircraft.
- •
- • Audio repellents: o Propane cannons.
- o Distress-call and electronic noise-generative systems.
- o Shell crackers and other pyrotechnics fired from shotguns or handheld launchers. User must be sure that the airspace is clear of aircraft prior to discharge so as to A) not direct the projectile toward the aircraft and B) not initiate bird flight into the path of the aircraft.
- •
- •
- • Visual repellents: o Short term effectiveness: eye-spot balloons/flags, mylar reflecting tape.
- o Display of dead birds in "death pose". Display of taxidermy-preserved predators.
- o Handheld laser emitting devices. User must be sure that the airspace is clear of aircraft prior to laser use so as to A) not direct the laser toward the aircraft and B) not initiate bird flight into the path of the aircraft.
- •
- •
- • Trained Dogs
- • Radio Controlled Model Aircraft By an FAA certificated UAS pilot, per 14 CFR part 107, and in a manner that does not initiate bird flight into the path of an aircraft.

Thanks,

Michael

Michael Menon, C.M.I Airport Operational Safety & Wildlife Program Manager

Wisconsin Department of Transportation/Bureau of Aeronautics

michael.menon@dot.wi.gov (608) 267-5272

From: Lovell, Charles D - APHIS <charles.d.lovell@usda.gov <mailto:charles.d.lovell@usda.gov> >
Sent: Wednesday, May 29, 2019 2:56 PM
To: Jeffrey Kraemer <jeff@heartlandecological.com <mailto:jeff@heartlandecological.com> >; Menon, Michael V - DOT <Michael.Menon@dot.wi.gov <mailto:Michael.Menon@dot.wi.gov> >
Cc: Kerrie Hauser (Kerrie.j.hauser@usace.army.mil <mailto:Kerrie.j.hauser@usace.army.mil>) <Kerrie.j.hauser@usace.army.mil <mailto:Kerrie.j.hauser@usace.army.mil> >; Dale Clark <blackbearenterprises@yahoo.com <mailto:blackbearenterprises@yahoo.com> >; Scott Fuchs <scott@heartlandecological.com <mailto:scott@heartlandecological.com> >
Subject: RE: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Jeff –

USDA, Wildlife Services is in agreement at this phase of the project that the Big Hollow Wetland Mitigation project site should move forward with the contingencies listed in the plan and below following our recommendations in the completed Wildlife Hazard Assessment and any future recommendations we may provide. As a non-regulatory agency, we cannot "sign-off" on anything and are only able to provide our recommendations to the BOA and USACE as we have done thus far. We look forward to reviewing the draft MSI and any additional documents related to this project. Feel free to contact me with any additional questions.

Thanks,

Chip

Charles D. Lovell

District Supervisor/Certified Wildlife Biologist®

USDA • APHIS • Wildlife Services

1201 Storbeck Drive | Waupun, WI 53963
* 920.324.4514 | Mobile: 920.392.9795 | * charles.d.lovell@usda.gov <mailto:charles.d.lovell@usda.gov>

PROTECTING PEOPLE – PROTECTING AGRICULTURE – PROTECTING WILDLIFE

Advanced Out-of-Office Notice:

From: Jeffrey Kraemer [mailto:jeff@heartlandecological.com]
Sent: Friday, May 17, 2019 3:12 PM
To: Lovell, Charles D - APHIS <charles.d.lovell@usda.gov <mailto:charles.d.lovell@usda.gov> >; michael.menon@dot.wi.gov <mailto:michael.menon@dot.wi.gov>
Cc: Kerrie Hauser (Kerrie.j.hauser@usace.army.mil <mailto:Kerrie.j.hauser@usace.army.mil>) <Kerrie.j.hauser@usace.army.mil <mailto:Kerrie.j.hauser@usace.army.mil> >; Dale Clark <blackbearenterprises@yahoo.com <mailto:blackbearenterprises@yahoo.com> >; Scott Fuchs <scott@heartlandecological.com <mailto:scott@heartlandecological.com> >
Subject: Big Hollow Wetland Mitigation Wildlife Hazard Resolution

Chip and Michael –

Attached is a revised version of the document that was previously sent to you outlining how the bank sponsor will address wildlife hazards to aircraft. The purpose of this document is to outline the best management practices that may be implemented during the management period of the project to reduce wildlife hazards, demonstrate the commitment from the bank sponsor to incorporate all practicable measures within the final mitigation design to limit wildlife hazards, implement short and long term management strategies, and commit to incorporating specific performance standards, management strategies and requirements for wildlife management into the Mitigation Banking Instrument (MBI) which will be the legally binding operation and management plan. Additionally, final approval of the MBI by the USACE will be contingent upon the review and approval by representatives of the Wildlife Service and Bureau of Aeronautics.

If both of you are in agreement with moving this project forward to the next phase of design, the Corps will need your signature on this document basically that states that your agencies agree that this project can be appropriately designed and managed such that wildlife hazards to aircraft will not be increased as a result. This is not intended to be a sign-off on the final design, management methods, or performance standards, nor is it a sign-off that there will not be any risk. In fact this document states that both of your agencies will be required to review and comment on the final MBI (which incorporates the operation and management plan) prior to the USACE final approval.

Following your approval of this phase (concept planning), the next step of the project will be to complete the remaining baseline data collection, detailed site design (grading plan, hydrology restoration, and vegetation planting plan), develop short and long term performance standards (hydrology, vegetation, and wildlife), develop management and monitoring requirements, conservation easement legal requirements, and financial assurances. This will all be laid out in detail in a draft MBI, which both of your agencies will have an opportunity to review and provide input and comments prior to finalizing and prior to the USACE approving.

Please let me know if you have any questions. Hopefully, with your approval, we can move forward with the next phase of project design.

Thanks,

Jeff Kraemer, Principal

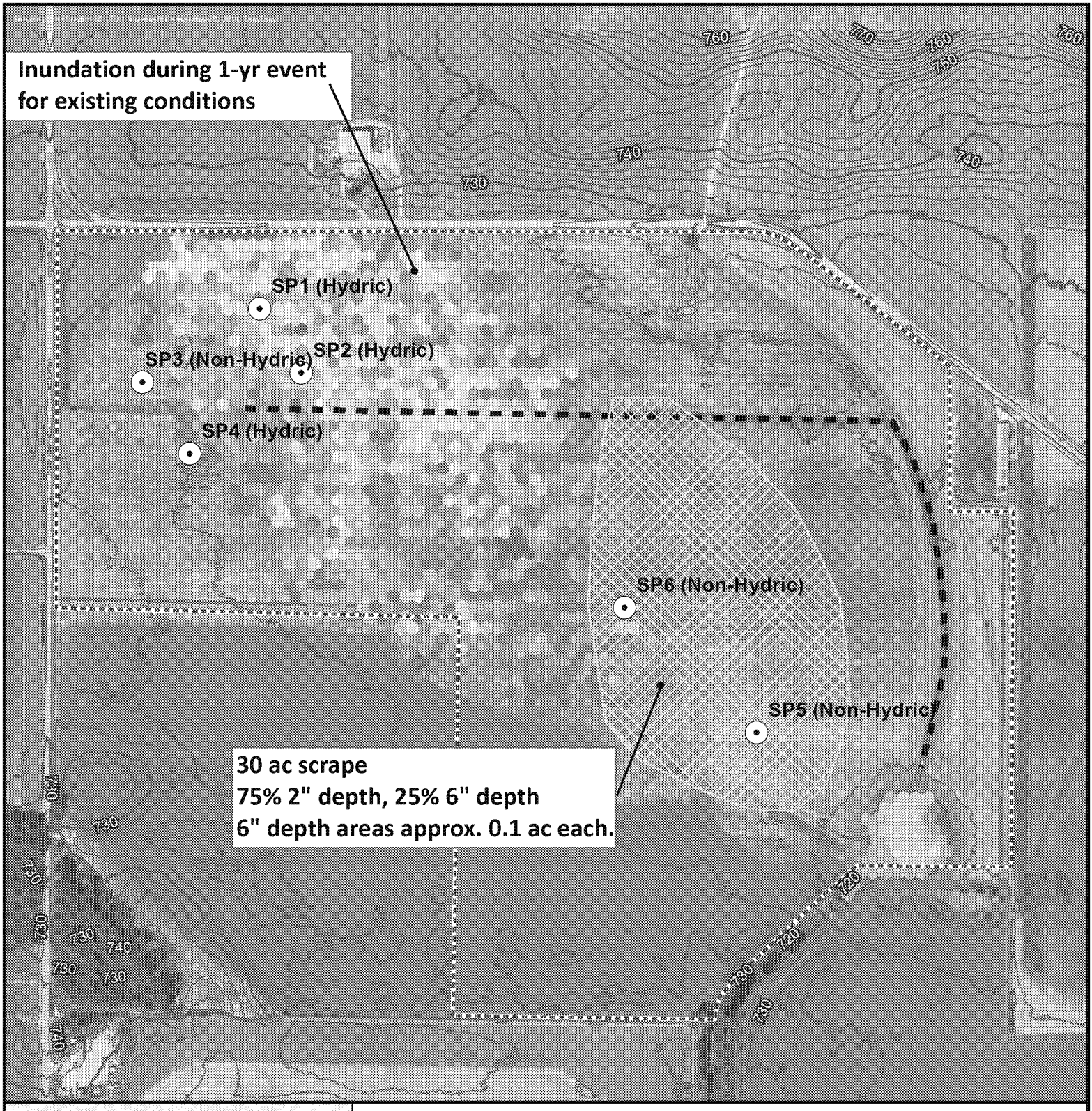
506 Springdale Street

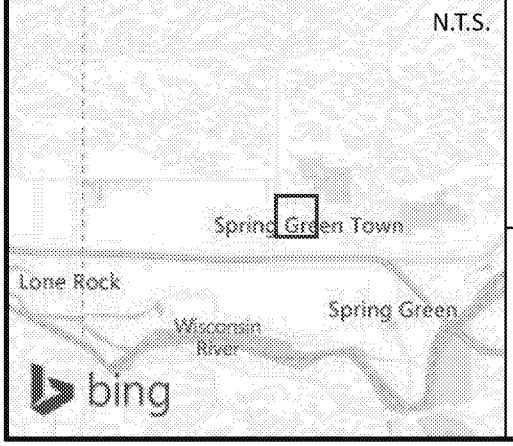
Mt. Horeb, WI 53572

Office: 608.490.2450 Ext. 2

Cell: 608.575.5783

Blockedwww.heartlandecological.com <http://secure-web.cisco.com/1ZvquHSf06YHxcREIwAar2Nl71cqoyQdOOrTL83xj1p9vETDwbFds65IeTtKLrGXvsvS3V2tR1qWn4ZoI5Fkkha1fK85nx2fsR01Os0w1RSfOviZvGDNuTB8PJp24eU1xc6rRiO83KjZIan1DnbzFn85Wd_9UZWK0u3zbDJG0ZLEEeVkVgFlbbaujsmABR19Det3IVI7UJcKCBhNuSOhBDcl1LEcbpy_5Zw5RrItOQ1RWgXR6xlDto4swhW0fwRgz/http%3A%2F%2Fwww.heartlandecological.com%2F>





Proposed Boundary
Prposed Berms
Proposed Scrape
2020 soil pit
Ditch fill

N
W E
S

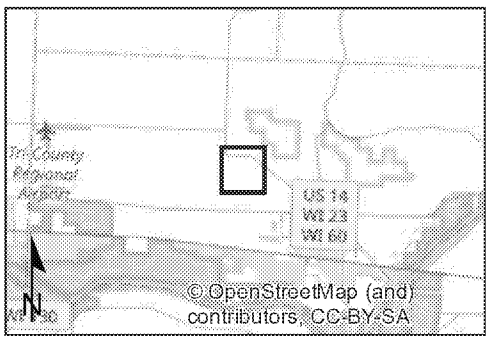
0 125 250 500
Feet

CONCEPTUAL GRADING PLAN

Big Hollow Wetland Mitigation Bank
Town of Spring Green
Sauk County, WI
Black Bear Enterprises, LLC

Emmons & Olivier Resources, Inc.
119 South Main St.
Cottage Grove, WI 53527
www.eorinc.com
(608) 839-4422

Drawn by: NGH | 1/22/2021 | Coordinate System: NAD 1983 HARN Sauk County Ft.



Mit. Bank Area (192.72 ac)

Existing Ditch to be Filled

Proposed Flowpath

Proposed Scrapes (30.81 ac)

Proposed Berms

0 300 600 Ft

Heartland ECOLOGICAL GROUP INC

Figure 9. Proposed Hydrology / Earthwork

Big Hollow Mit. Bank
Project #20190160
T8N, R3E, S02
T Spring Green, Sauk Co, WI

2018 NAIP
Data: HEG, EOR *1/25/2021*


Big Hollow Rd
Co Rd C
Mit. Bank Area (192.72 ac)
0
300
600
Ft
Proposed Vegetation
Mesic Prairie (58.19 ac)
Wet Meadow (134.53 ac)
US 14
WI 23
WI 60
© OpenStreetMap (and) contributors, CC-BY-SA
Heartland
ECOLOGICAL GROUP INC
Figure 10. Proposed Vegetation
Big Hollow Mit. Bank
Project #20190160
T8N, R3E, S02
T Spring Green, Sauk Co, WI
2018 NAIP
Data: HEG
1/25/2021


Big Hollow Rd
Co Rd G
Mit. Bank Area (192.72 ac)
Irrigation Well
Distance From Irrigation Well
500 ft Radius
1500 ft Radius
0
300
600
Ft
US 14
WI 23
WI 60
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Heartland
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Figure 10a. Irrigation Well Location and Setbacks
Big Hollow Mit. Bank
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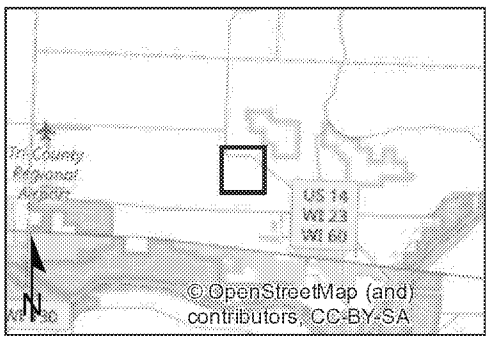

Mit. Bank Area (192.72 ac)

Scrape Location

Proposed Vegetation

Mesic Prairie (58.19 ac)

Wet Meadow (134.53 ac)

Compensation Types

Re-Establishment (70.06 ac / 1.0:1)

Rehabilitation (3.24 ac / 0.75:1)

Establishment (61.23 ac / 0.5:1)

Upland Buffer (58.19 ac / 0.25:1)

0 300 600 Ft

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Figure 11. Wetland Compensation Types

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SP1
SP2
SP3
SP4
SP5
SP6
P1
P2
P3
P4
P5
P6
Co Rd G
Big Hollow Rd
Mit. Bank Area (192.72 ac)
Sauk Co 2' Contours
Soil Sample Points
Hydric
Non-Hydric
Field Hydric Soil Determinations
Predominantly Hydric
Marginal Hydric Indicators
Non-Hydric
0
300
600
Ft
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US 14
WI 23
WI 60
Heartland
ECOLOGICAL GROUP INC
Figure 12. Field Hydric Soil Determination
Big Hollow Mit. Bank Project
#20190160
T8N, R3E, S02
Town of Spring Green, Sauk Co, WI
Data: HEG
1/25/2021